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Effects of traditional, blended and e-learning on students' achievement in higher education

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Abstract The study investigates the relationship between e-learning, blended learning and classroom learning with students' achievement. Two experimental groups together with a control group from Umm Al-Qura University in Saudi Arabia were identified randomly. To assess students' achievement in the different groups, pre- and post-achievement tests were used. The results of the study (N=148) show that there was a statistically significant difference between the three methods in terms of students' achievement favouring the blended learning method (n=55) with a substantial effect size of 1.34 (Hedges' g). No significant difference was found between the e-learning (n=43) and traditional learning groups (n=50) in terms of students' achievement and with a negligible effect size of 0.02.

Keywords e-learning, blended learning, traditional learning, asynchronous online classroom, achievement, Moodle, Higher Education, Islamic Culture course.

Introduction

The information technology revolution has led to rapid expansion across a wide range of areas in the modern world. This has made it an essential requirement for schools, universities and other educational institutions to identify potential benefits from these changes so as to improve teaching and learning environments as well as cope with an ever increasing demand for education and training. In this regard, Malalla (2004) and Sonwalkar (2002) point out that both educational institutions and private companies have been quick to offer distance education programs, using information and communications technologies (ICT), as a means to address this demand. Distance learning has, of course, been in existence for a considerable length of time before the advent of digital technologies and has always used contemporary communications technologies since Pitman's pioneering postal courses to teach shorthand in the 1840s. In this study it is conceptualised as when teacher and learner are separated in either

time or by distance or both (Moller, 1998, p. 115). The benefit of distance education as indicated by Al-Dabbasi (2002) and Ismail (2003) can be seen from three perspectives. From the learner's perspective, it means freedom from some of the constraints of time, of place and country, and of age with greater access to more opportunities for continuing education. From a higher education institution's point of view, distance learning can remove the geographical and even political limitations on recruitment and enable courses to be taught at a larger scale or to efficient or economic cohorts of students. From a state or national perspective, the idea of distance education should mean increasing the number of students and providing learning opportunities for those who are distant from educational institutions at minimum cost, particularly without the need for additional local staff or the need for new premises or facilities. Meta-analysis suggests that distance education and classroom instruction have similar attainment outcomes for students (Bernard et al. 2004). As new digital technologies emerge it is important to demonstrate that they are similarly effective in supporting distance learning. E-learning can be conceptualised as *all* forms of electronically supported or mediated learning and teaching (Moore, Dickson-Deane & Galyen 2011). If it can be shown that e-learning at a distance is as effective as traditional face-to-face instruction, then there is a persuasive case to expand distance learning through e-learning technologies. The ICT systems and digital technologies, whether networked or not, serve as specific media to implement the learning process (Tavangarian, Leypold, Nölting & Röser, 2004). In this study distance e-learning refers to learning supported by digital technologies (such as networked computers or through access to the internet) where the teacher and learner

are *not* present at the same time so it overlaps with the definition of distance learning given above.

Definitions of E-learning

E-learning has been defined in a range of different ways and definitions of e-learning, online learning, technology enhanced learning (TEL) and distance learning often overlap (Moore, Dickson-Deane & Galyen, 2011). For example, Urdan and Weggen (2000, p 11) focus on content delivery and define e-learning as "the delivery of content via all electronic media, including the internet, intranets, extranets, satellite broadcast, audio/ video tape, interactive TV, and CD-ROM". According to Meyen et al. (2002) e-learning can be defined as the "acquisition and use of knowledge distributed and facilitated by electronic means", a definition which focuses on knowledge acquisition. Khan (2005, p 3) defines e-learning as "an innovative approach for delivering well-designed, learner-centered, interactive, and facilitated learning environment to anyone, anyplace, anytime by utilizing the attributes and resources of various digital technologies along with other forms of learning materials suited for open, flexible, and distributed learning environment". This definition includes perspectives on pedagogy as well as content and access. In the current study the e-learning component took the form of an asynchronous online classroom. This was an online space where students could interact with learning materials and with each other, but without the physical presence of the instructor. They were not required to be online at the same time. It was designed using the learning management system Moodle, following the ADDIE design model (Dick & Carey, 2001) which sought to take advantage of the pedagogical affordances of the e-learning environment in designing resources for learning.

A number of recent studies have investigated the effect of distance e-learning as compared with face-to-face learning on the students' achievement in higher education such as Carswell, Thomas, Petre, Price and Richards (2000), Collins (2000), Goldberg and McKhann (2000), Johnson et al. (2000), Gunnarsson (2001), Ryan (2002), Kekkonen-Moneta and Moneta (2002), Lim (2002), and Ernst and Colthorpe (2007). Moreover, further recent studies (Utts Sommer, Acredolo, Maher & Matthews, 2003; Taradi, Taradi, Radic & Pokrajac , 2005; Akkoyunlu & Soylu, 2006; Scida & Saury, 2006, Pereira et al., 2007; Bryner, Saddawi-Konefka & Gest 2008), McFarlin, 2008; O'Leary, 2008; Alshwiah, 2009; and Gurpinar, Zayim, Ozenci, & Alimoglu, 2009) have compared blended learning (which combines elements of e-learning and face-to-face instruction) with face-to-face classroom learning. A comprehensive analysis of the variation in impact is described by Bernard et al. (2009). In contrast, relatively few studies have directly compared the three methods: e-learning (without the teacher being physically present), blended learning and face-to-face classroom learning in terms of their impact on students' achievement (as assessed by typical module tests and examinations) in higher education. The current study contributes to addressing the relative scarcity of this kind of three-way experimental study in higher education. The aim was therefore that this study should contribute to clarifying to what extent e-learning and blended learning approaches might promote students' achievement (assessed through an academic test of knowledge and understanding matched to the module objectives) as compared with face-to-face learning under similar circumstances (i.e. the same curriculum content taught as a face-to-face module in the normal way at this University). This aim was formalised as a series of hypotheses which predicted that there would be no statistically significant difference (at the .05

level) between the three groups: face-to-face teaching, e-learning and blended learning and investigated with an experimental design.

Advantages and disadvantages of e-learning

Given the benefits and advantages, e-learning is often considered among the best options among the range of approaches for the expansion of higher education (Marc, 2002; Al-Musa & Al-Mobark, 2005, particularly where this expansion is rapid (Hameed, Badii & Cullen, 2008). A range of advantages have been identified including the following:

- Individualisation, which is a feature of any well-designed learning environment, can be achieved through e-learning and aims to prioritise the needs of an individual learner rather than on the needs of the instructors, or the educational institution (Klein & Ware, 2003).
- E-learning environments can be designed can take into account individual differences and learners' preferences. For example, some learners may prefer to focus on particular content or work through additional support materials while others may be ready to complete the whole course (Akkoyunlu & Soylu, 2006). Although this is possible in other learning environments, it is often presented as a feature of e-learning.
- A synchronous e-learning can provide flexibility in terms of time and place, where each student chooses what suits him or her (Al-Musa & Al-Mobark, 2005), similar to other forms of distance learning.
- E-learning can enhance the efficiency of access to knowledge and qualifications due to the availability of large amounts of information, and

access to specific expertise from online instructors. This can can be hard to offer in smaller institutions or where there is a low population density in a particular region or country (Marc, 2002).

- E-learning can be cost effective for students as they do not need to travel, and efficient in terms of time. It can also be cost effective for an institution reducing the need for physical classrooms and increasing the potential catchment area (Al-Musa & Al-Mobark, 2005).
- E-learning can provide opportunities for interaction between learners through discussion forums and through eliminating the barriers that might hinder participation, such as fear of talking to others in a physical setting (Hameed, Badii & Cullen, 2008).

Disadvantages have also been identified:

- In e-learning the learner might suffer from isolation and the lack of direct social interaction, as sometimes found with distance learning, therefore requiring the learner to have relatively strong motivation and skills with regard to time management to mitigate this effect (Hameed, Badii & Cullen, 2008).
- E-learning might have a negative impact on the development of communication skills of learners. In other words, although a learner might have acquired excellent academic knowledge, yet he or she might not have the skills to communicate this knowledge to others (Akoyunlu & Soylu , 2006; Klein & Ware 2003).
- E-learning might be less effective than face-to-face learning in terms of aspects of the learning process such as clarification and explanation, as these may be easier in face to face encounters. In addition, e-learning may lack the

support provided by non-verbal clues provided or by observing the interactions of others (Al-Musa & Al-Mobark, 2005).

- In e-learning cheating may be easier in some circumstances as participation and even assessment tests could possibly be done by proxy unless appropriate safeguards are put in place (Marc, 2002).

The obvious strategy emerging from this polarisation is to capitalise on the positive aspects of e-learning and to mitigate the negative aspects in an approach which expressly tries to incorporate the advantages and avoid the disadvantages. One such approach would be to develop blended learning courses (Akkoyunlu & Soylu, 2006).

Definitions of Blended learning

Again, according to Clark and Mayer (2007), there is a range of definitions of blended learning. For example, Thorne (2003) and Gutierrez (2006) suggest that blended learning is the integration between e-learning and face-to-face instruction. Mayadas and Picciano (2007) on the other hand define blended learning as simply a combination of online learning and face-to-face instruction; Garnham and Kaleta (2002) define such 'hybrid' courses with a more sequential perspective as conventional courses with parts of their instructional activities running online, so that such an arrangement considerably cuts down the time students spend in face-to-face classrooms.

In the current study blended learning took the form of a combination of face-to-face classroom teaching with lecture and class formats and the use of an asynchronous online classroom. The students had to attend classes in person, but also had access to an asynchronous online classroom to undertake a range of learning activities based on

their classes. These included enhancing their knowledge through additional reading and through browsing relevant linked websites, with other activities such as self-assessments, exercises and group tasks and structured discussions.

A number of aims are associated with the design of blended learning environments. Osguthorpe and Graham (2003: 231) emphasize six aims of designing blended learning, which include "pedagogical richness, access to knowledge, social interaction, personal agency, cost effectiveness, and ease of revision"; factors all supported by Bernard et al.'s (2009) meta-analysis. Some researchers (e.g. Gould, 2003; Akkoyunlu & Soylu, 2006) argue that by using blended learning students will be able to benefit from the combined merits of both e-learning and face-to-face learning. Thus, in the current study, the asynchronous online classroom provided accessibility and flexibility in terms of time and place, with the opportunities of more interaction (connectivity) through online discussion, efficiency, taking into account the individual differences between learners in terms of where they chose to focus their time and effort. These activities were structured to fit with the curriculum goals and specific learning outcomes of the module, and to take advantage of the facilities within the online classroom environment. In the meantime the face-to-face classroom retained the usual approach to teaching and learning adopted in the University, relying mainly on lecture presentation, question and answer, and with assigned readings for each session.

Study design

This study was carried out using pre-test / post-test design with a control group. This was in order to identify as far as possible a causal relationship between the modes of

delivery and learning outcomes, as much of the experimental literature comparing distance e-learning with face-to-face teaching cannot adequately control for differences such as student motivation at registration and throughout the course (Cornell and Martin, 1997). The current study involved three groups, two experimental groups and one control group (Cohen, Manion and Morrison, 2007). All groups were given an achievement pre-test of their baseline knowledge and understanding of the module content (see below for further details), then the two experimental groups had varied teaching experience; the first group was taught by e-learning, the second group by blended learning (a combination of the face-to-face classes, with access to the e-learning environment as a distinct group), while the control group received the usual teaching, which was a face-to-face approach. Differences between the three groups were then identified.

Study sample

Using random selection, three groups were chosen from 65 groups of students studying an Islamic Culture course (101) at Umm Al-Qura University in Saudi Arabia. Groups were then randomly assigned to conditions. The study sample consisted of 148 students, 50 students in the control group, 43 students in the first experimental group, and 55 students in the second experimental group. Although random allocation of students to groups would have been preferable, this was not practicable in terms of the students' other studies, and permission from the host institution was not available to vary the students' experience in this way. The design does not therefore control for any systematic variation which might be associated with the grouping arrangements at the University.

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Control of extraneous variables

To establish comparability and because there was randomisation only at group level a series of possible confounding variables were explored at pre-test (see Table 1), including computer skills and experience and areas of specialism and prior qualifications based on a questionnaire by Al-Zahrani (2002). No significant differences were found. These were selected as the most likely to influence the outcomes of the experiment. Other possible confounding variables associated with learning outcomes, such as independent learning or self-regulatory skills, motivation, or communicative preference were not assessed and therefore pose a threat to the validity of the study. The underlying assumption was that these variables are generally associated with a relatively small proportion of variance in student achievement (see for example Masgoret & Gardner, 2003) and were likely to be evenly distributed within the groups, once attainment, subject and level of computer skills were taken into account (Wan, Wang & Haggerty, 2008). Motivation is typically the most highly correlated of these variable with learning outcomes but this is a relatively weak association (.25 - .35 (Masgoret & Gardner, 2003 p.)), so explaining between 6%- 12% of the variation in attainment. This assumption needs to be borne in mind when interpreting the findings. The course was undertaken by all undergraduates and allocation to groups was a timetabling issue, so any systematic bias was likely to be caught by the area of specialism. However it must be acknowledged that this is a potential source of bias and therefore a possible weakness in the study.

Variable	Level of significance
Owning a personal computer	0.291 (non-sig.)
Take-up of computer-training courses	0.562 (non-sig.)
Using the internet	0.373 (non-sig.)
Having an e-mail address	0.293 (non-sig.)
Training on internet applications	0.576 (non-sig.)
The ability to access e-mail	0.100 (non-sig.)
The ability to send e-mails	0.213 (non-sig.)
The ability to attach files	0.452 (non-sig.)
Pre test content knowledge in the unit	0.186 (non-sig.)

Table (1): Equivalence of groups for variables which might affect the results other than the independent variable.

Study instruments and materials

For the purpose of this study, the Ethics unit from an Islamic Culture course (101) was selected for development as an asynchronous online classroom to facilitate learning for the two experimental groups. The content of this unit was determined based on the main reference for the Islamic culture course (101) which was compiled by a group of staff members from the college of Dawah and Islamic Religion Origins at Umm Al-qura University. A main reference work, 'The Book of Islamic Culture', outlined the objectives and the content of the course.

The asynchronous online classroom

The ethics unit of the Islamic Culture course (101) was electronically designed to take advantages of the features of Moodle, with a range of resources and links to learning materials linked to each course session, opportunities for interaction through chat, discussion and e-mail, and feedback through quizzes . After the completion of the asynchronous online classroom design and its hosting over the internet, a formative

evaluation stage was undertake to ensure that the system was working appropriately and according to plan, then any necessary corrections and amendments were made following the ADDIE model (Dick & Carey, 2001). This stage included individual testing by the designer to ensure effective functionality; presentation to a group of staff members from the department of Dawah and Islamic Culture and the Department of Curricula and Teaching Methods at Umm Alqura University who showed interest in e-learning; and pilot testing with a small group of students and further response to their feedback.

Ethical issues

Consent of the participants was obtained to become involved in the experimental study after being briefed on the nature and the purpose of the study, as well as the methods of teaching to involved and the instruments that would be used in the study (Johnson and Christensen, 2008). The participants were also told that they would have the freedom to move to other groups in the course which were not involved in the experiment (Creswell, 2008). Participants were also reassured that all information related to them would be treated as confidential and would not be used for any other purpose without their consent. The study was given ethical approval in Autumn 2008 prior to piloting.

The achievement test

Given the nature of this study which would require the identification of the student level of knowledge about the ethics unit before and after the experiment, an achievement test of ethics knowledge and understanding was prepared on the basis of

the unit objectives and featuring items drawn from the set text. The initial draft of the achievement test items consisted of 30 questions (15 true/false questions and 15 multiple choice questions). However, in the light of the assessors comments and suggestions the achievement test was amended in its final draft consisting of 23 questions all of them multiple choice questions (see Appendix 1 for the final version). To verify the face validity of the achievement test, it was submitted with the general aims, behavioural objectives, and the content of the unit to a number of assessors from the Department, in order to benefit from their advice and comments regarding the suitability and clarity of test questions. The test was also piloted with 30 students who were not members of the study sample and the level of difficulty assessed, ranging from 0.18 to 0.51 which was considered acceptable (Haladyna et al. 2002). The reliability (internal consistency) was 0.74 and considered sufficient to use in the main study (Zinbarg et al. 2006). After preparation and confirmation of validity and reliability of the environment and research instruments, the teaching experiment was undertaken over a six-week block. All three groups were taught the same unit by the same instructor (who was one of the researchers) in each of the conditions.

Study results

To verify the study hypotheses, arithmetic means and standard deviations (SD) of the performance of the three groups of the study sample in the pre- and post- achievement test were calculated (Table 2).

Groups	E-learning group (1st experimental) n = 43		Blended learning group (2nd experimental) n = 55		Face-to-face learning group (control) n = 50	
	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
Mean	14.23	18.12	14.09	20.83	13.18	18.08
SD	2.23	2.21	2.24	1.66	2.14	2.39

Table 2: Pre- and post-test differences

To find out whether the differences between the arithmetic means of study sample groups in the post-test achievement are statistically significant, an analysis of covariance (ANCOVA) was conducted. Levene's test of equality of error variances confirmed that the groups were homogenous (Abu-Allam, 2003; Sharaz, 2009) and that the variation between them was non-significant at the 0.05 level at pre-test (F, 2.71, p = 0.070).

The relationship between the method of teaching and students' achievement was significant (F (1,144) = 28.84 p = 0.001. The use of Fisher's post hoc test (LSD) to find out which means were significantly different shows that there is a statistically significant difference between the blended learning group and the e-learning group (mean difference 2.75, significant at the .05 level) and between the blended learning group and the face-to-face learning group (mean difference 2.58, significant at the .05 level). On the other hand, the difference between e-learning group and the face-to-face learning group was not statistically significant (mean difference 0.17, not significant).

The analysis therefore shows that there was no significant difference between the achievement of the students who used e-learning and the achievement of the students

who used the usual learning methods at this University. By contrast results indicate that there is a statistically significant difference between the achievements of these two groups and the blended learning group.

The extent of the difference

Dreder (2005) and Pallant (2001) argue that finding differences of statistical significance between study groups is not sufficient, and that the extent of the difference, reported as an effect size should be taken into account. Therefore, the practical significance as well as the statistical significance should be determined. Asyad (1988) emphasizes the fact that the statistical significance is a necessary condition, but not sufficient for a sound educational decision-making.

Partial Eta squared (η^2)

Two types of effect size (Pallant, 2001) were calculated to identify the extent of the difference between the groups. The first was the calculation of the value of Eta squared (η^2) representing the proportion of variance of students' achievement explained by the teaching condition (Pallant, 2001; Richardson, 2011). In this study η^2 is 0.29, so about 30% of variance of the dependent variable (students' achievement) is related to the teaching methods (Richardson, 2011). This ratio is higher than 15% which is the minimum level indicative of the practical significance for the statistical results in educational and psychological research (Abu-Hatab and Sadek, 1996).

Standardised mean difference

Effect sizes for comparison with other studies can be calculated using the standardised mean difference (the mean values for two groups, divided by an estimate of the population standard deviation). Though Coe (2004) suggests that the best estimate of the standard deviation is a pooled standard deviation as this will give more accurate result than estimates based on the standard deviation of the control group only. This has been adjusted for sample size (Hedges' g) in Table 5.

Group	n	Mean	SD	Standardised mean difference	
				Hedges' g	Confidence interval
E-learning	43	18.12	2.21	0.02	0.39 to -0.42
Blended learning	55	20.84	1.66	1.34	1.76 to 0.92
Control	50	18.08	2.39	-	-

Table 5: The effect size based on means

In summary the students' achievement in the blended learning approach was better than the students taught using a face-to-face approach in this study. There was also a very small positive, but non-significant, effect associated with e-learning and students' achievement compared with normal teaching. The extent of the difference between the students in the blended learning approach as represented by the effect size is large. Intervention studies in education typically identify a difference of between 0.2 and 0.6, though the average impact with technology tends to be slightly lower (Sipe and Curlette, 1997; Hattie, 2008). An effect size of 1.34 indicates that about 90% of the face-to-face group were below the average of the control group at post-test (Coe, 2004).

Discussion of results

This analysis shows that there is a statistically significant and educationally important difference between the achievement of students who used blended learning and the achievement of students who used e-learning only (studying through the asynchronous online classroom only) favouring the former group. These results appear to be inconsistent with a number of comparable studies. For example, Dodero, Fernandez and Sanz (2003) found that blended learning was more effective than e-learning in terms of students' participation, but not with regards to students' achievement. Kennedy and McCallister (2000) found no statistically significant difference between e-learning, face-to-face and blended approaches regarding their effect on students' achievement. Similarly Lim, Morris and Kupritz (2006), Hameed, Badii and Cullen (2008) and Lim and Yoon (2008) all found no significant differences between blended learning and e-learning as to their effect on learners' achievement. Al-Zahrani (2008) found no significant differences between online and blended learning groups with regard to cognitive tests, whereas both outperformed the control group. So although many previous studies indicate that there are differences between blended learning and e-learning modes this is not usually significant in terms of their effect on students' achievement or assessed learning. The results of this limited small-scale study by contrast suggest that blended learning can support students' learning more effectively than e-learning or face-to-face teaching alone. They therefore suggest that it is possible to design approaches to blended learning which adopt the positive aspects of e-learning and can combine them with those of face-to-face teaching and avoid some of the disadvantages (Gould, 2003; Akkoyunlu & Soylu, 2006). The lack of consistency in the results of this current study compared with other the previous studies could be due a number of factors. It might be factors

in terms of the differences in aspects of the two approaches (face-to-face and e-learning) or their combination. One possibility is the use of an asynchronous online classroom in this study rather than the synchronous online discussion forum as used by Dodero, Fernandez and Sanz (2003). Bernard et al.'s (2009) meta-analysis indicated asynchronous approaches tend to be more beneficial than synchronous. Another factor which might cause this inconsistency is a difference in the design of the instructional model which could affect students' participation and motivation (Jonassen, 1999; Ruffini, 2000). There are also possible differences in the software used in the design such as Moodle in current study and Microsoft's Outlook Express used in Banks (2004) study. Students in the blended learning condition may have benefited from experiencing both modes of instruction or from the additional resources provided, though all versions of the course were designed to be completed in a similar time by the students in accordance with the module requirements. In addition, systematic differences other than those controlled for in this study (i.e. prior knowledge of the subject as assessed with the baseline test, subject being studied and computer skills as assessed by the initial questionnaire) between the students or the groups may account for the differential gains as the three groups were only randomised at group level. Finally there is the possibility of researcher bias influencing the outcomes as all of the groups were taught by the same instructor who was also the lead researcher.

E-learning and face-to-face approaches

The results in terms of the similarity of the attainment of the e-learning and face-to-face groups are consistent with the results of a number of studies reviewed above. This perhaps indicates similarity between an online classroom method and the face-

to-face approach regarding their respective relationship with students' achievement. The implications are that for this module as it is currently taught the online classroom could provide a means of resolving the many challenges that face contexts where higher education is expanding rapidly, such as in Saudi Arabia, and where there are shortages of qualified staff to meet an ever increasing demand (Al-Salem & Al-Dawid, 2002; Al-Zahrani, 2002). The value of the online classroom and learning platforms has been demonstrated with some studies identifying e-learning as more effective compared with face-to-face learning on students' achievement (Goldberg & Mckhann, 2000; Ernst & Colthorpe, 2007; Salamh, 2005; Al-Far, 2002; Al-Sahrani, 2002; Al-Hogali, 2006; Barakzai, 2003; El-Deghaidy & Nouby, 2008; Al-Zahrani, 2008). However the results of the current study suggest some caution in generalising other results indicating any general superiority of e-learning over face-to-face approaches. There may, of course, be some influence of cultural context here. Students in Saudi Arabia are used to a more traditional mode of learning and may rely more on the presence of the instructor, new modes of instructional delivery may require more support in different contexts (Al-Musa & Al-Mobark, 2005; Yamani, 2006). This may have been particularly true for the Islamic Ethics course and its specific content. However Bernard et al.'s (2004) meta-analyses of the difference between distance and face-to-face teaching suggest that the outcomes in terms of students' learning tend to be very similar.

The implications in terms of the comparison between face-to-face and blended learning are worth exploring further. The large effect size of 1.34 (Hedges' g) suggests that blended learning has a practical significance with regard to improving

students' achievement. These results are consistent with the results of a number of other studies (e.g. Taradi et al., 2005; McFarlin, 2008; Gurpinar et al., 2009; Pereira et al., 2007; Scida & Saury, 2006; and Al-Zahrani, 2008). These studies indicated the effectiveness of blended learning in improving of students' achievement. In this regard, the presence of the instructor coupled with the flexibility of e-learning method in terms of time and place tend to provide a chance for learners to thoroughly review the instructional material and undertake independent activities. The combination of structure and authority (provided by the instructor) and the opportunity to undertake self-directed study (offered by the online environment) seemed to benefit the particular students in this research. Other research suggests (e.g. Kembera et al. 2010) that the quality of communication in an online environment may be more important than access to information alone however. The discrepancy with other studies which found no differences between the blended learning and face-to-face approaches in terms of their impact on students' achievement (Kennedy & McCallister, 2000; O'Leary, 2008; Banks, 2004; Alshwiah, 2009; Bryner et al., 2008; Utts et al., 2003) needs to be explained or indicates areas for further research. This small-scale study has, of course, limited inference and some systematic variation may result from the limited randomisation at class level. A small-scale study is also susceptible to what Cronbach and colleagues (1980) describe as 'super-realization bias' creating optimal conditions for improvement. The extent of the difference in this study is, however, surprising. The difference in results could be related to the effectiveness of the instructional design or specific the differences in the framework of blended learning. Again, the combination designed for this study may have provided an appropriate match in terms of the course content and the students' skills and experience of

learning in the Saudi Arabian context. In addition, none of the studies mentioned above identified a negative impact of blended learning on students' achievement, suggesting it is also a valuable approach to explore when undertaking expansion in Higher Education, especially in the Saudi Arabian context.

Conclusions

In conclusion, the blended learning approach undertaken in this study appears to have provided a clear advantage in terms of the students' achievement. It may have been the particular combination of face-to-face teaching featuring the presence of an instructor and e-learning with its acknowledged flexibility in this particular context, and for these particular students, or in other words the meditational opportunities supported by the different context. It suggests that the physical absence of a course instructor may be a disadvantage in some e-learning contexts, particularly where students may be more used to a traditional instructional approach, such as in the cultural context of this study. Of course the current study has its own strengths and limitations. As far as the strengths are concerned, in the current study all three groups were similar in terms of curriculum, course materials, and chosen specialization. The participants were well matched in terms of technology skills and experience and on the base-line test of knowledge about the course content. It is one of the few studies with some level of randomisation to compare the three modes of learning, face-to-face teaching , blended learning, and e-learning within the same environment and circumstances, which enables a comparison to be made across the three conditions. On the other hand, one of the limitations of the study was the relatively small nature

of the study, with a single instructor who was also one of the researchers which may have had an impact on the results. It also only explored a few key variables in relation to the baseline assessment. Other factors, unknown to the researchers and not revealed by the analysis might account for some of the variation. Overall it adds to the evidence suggesting that both e-learning and blended learning approaches offer a positive way forward for the continued expansion of higher education. However, more research needs to undertaken on the potential benefits of blended learning, perhaps combining the benefits of structure and authority offered by the physical presence of the teacher, with the advantages of more self-directed study in relation to this on the part of learners, particularly where either approach on alone may have limitations, either in terms of curriculum content, or in terms of students' learning skills and expectations about the learning context.

References

Abu-Allam, R. M. (2003) *Statistical analysis of data using SPSS software*. Cairo: University Publishing House.

Abu-Hatab, F. & Sadek, A. (1996) *Research methods and statistical analysis in educational research*. Cairo: Egyptian Anglo Press.

Akkoyunlu, B. & Soylu, M. Y. (2006) A study on students' views on blended learning environment. *Turkish Online Journal of Distance Education*, 7(3) 3, Available at: http://tojde.anadolu.edu.tr/tojde23/pdf/article_3.pdf (accessed 7/3/11).

Al-Dabbasi, S. M. (2002) *Globalization and education*. Riyadh: Alsafeer press.

Al-Far, A. A. (2002) The effect of using the internet on students' achievement and recall in a course of descriptive statistics. *Journal of Mathematics Education*, (June 5, 2002). (In Arabic)

Al-Hogali, M. A. (2006) *The effectiveness of using the internet in the teaching of geometry and conversion courses on students' achievement at teachers' college in Madinah*. Ph.D. Thesis, Umm Al-Qura University, Saudi Arabia.

Al-Musa, A. & Al-Mobark, A. (2005) *E-learning the fundamentals and the Implementations*. Riyadh: Datanet.

Al-Sahrani, M. B. (2002) *The effect of using internet in the teaching of geometry and converts course on the achievement of Bisha teachers' college students*. MA Thesis. Umm Al-Qura University, Saudi Arabia.

Al-Salem, M. & Al-Dawid A. (2002) *The efforts of King Fahd in the development of higher education: vision of the future*. Riyadh: Imam Muhammad bin Saud Islamic University.

Alshwiah, A. A. S. (2009) *The effects of a blended learning strategy in teaching vocabulary on premedical students' achievement, satisfaction and attitude toward English language*. MA Thesis. Arabian Gulf University, Saudi Arabia.

Al-Zahrani, A. (2002) *The effects of the use of the worldwide web on the achievement of the learners of the syllabus of educational technologies at the Teacher's Training College in Riyadh*. MA Thesis. King Saud University, Saudi Arabia.

Al-Zahrani, A. J. (2008) *Designing and implementing interactive computer software for educational technology course to measure its impact on the academic achievement*

of teacher college's students at Albaha zone. Ph.D Thesis. University of Umm Al-Qura, Saudi Arabia.

Asyad, A. A. (1988) Practical significance and the size of the sample in educational research. *Conference of educational research the present and future*, Cairo, 2, 197-233.

Barakzai, M. D. (2003) *Case study evaluation of three teaching modalities in physician assistant education: traditional lecture, workbook and videotape, and asynchronous learning network*. Ed.D. California University, United States.

Banks, L. V. (2004) *Brick, Click, or brick and click: A comparative study on the effectiveness of content delivery modalities for working adults*. Ph.D. Touro University, Nevada, USA.

Bernard, R.M., Abrami, P.C., Borokhovski, E., Wade, A.C., Tamim, R.M, Surkes, M.A. & Bethel, E.C. (2009) A Meta-Analysis of Three Types of Interaction Treatments in Distance Education *Review of Educational Research* 79.3 pp 1243-1289.

Bernard, R.M., Abrami, P.C., Lou, Y., Borokhovski, E., Wade, A., Wozney, L., Wallet, P.A., Fiset, M.,& Huang, B. (2004) How Does Distance Education Compare with Classroom Instruction? A Meta-Analysis of the Empirical Literature *Review of Educational Research*, 74.3, (Autumn, 2004), 379-439.

Bryner, B. S., Saddawi-Konefka, D. & Gest, T. R. (2008) The impact of interactive, computerized educational modules on preclinical medical education. *Anatomical Sciences Education*, 1 (6), 247-251.

Carswell, L., Thomas, P., Petre, M., Price, B. & Richards, M. (2000) Distance education via the internet: the student experience. *British Journal of Educational Technology*, 31, (1), 29-46.

Clark, R. C. & Mayer, R. E. (2007) *E-learning and the science of instruction: proven guidelines for consumers and designers of multimedia learning*. San Francisco, CA: Jossey-bass/ Pfeiffer.

Coe, R. (2004) Issues arising from the use of effect sizes in analyzing and reporting research. In *But what does it mean? The use of effect size in educational research*. (eds. I. Schagen, & K. Elliot) Slough: National Foundation for Educational Research.

Cohen, L., Manion, L. & Morrison, K. (2007) Research Methods in Education (6th Edition) London: Routledge

Collins, M. (2000) Comparing web, correspondence and lecture versions of a second-year non- major biology course. *British Journal of Educational Technology*, 31 (1), 21-27.

Cornell, R. & Martin, B.L. (1997) The role of motivation in web-based instruction. In Web-*based instruction* (ed. B. H. Khan) Englewood Cliffs, New Jersey: Educational Technology Publications Inc.

Creswell, J. W. (2008) *Educational research planning, conducting, and evaluating quantitative and qualitative research*. 3rd ed. USA: Pearson Merill Prentice Hall.

Cronbach, L.J., Ambron, S.R., Dornbusch, S.M., Hess, R.O., Hornik, R.C., Phillips, D.C., Walker, D.F., & Weiner, S. S. (1980). Toward reform of program evaluation: Aims, methods, and institutional arrangements. San Francisco, Ca.: Jossey-Bass.

Devellis, R. (1991) *Scale development: theory and applications*. California: Sage Newbury Park.

Dick, W. & Carey, L. (2001) The systematic design of instruction: origins of systematically designed instruction. In: P. Donald & P.Tjeerd, (eds.) *Classic writings on instructional technology*. Greenwood Publishing Group, Inc, 71-75.

Dodero, J, M. Fernandez, C. & Sanz, D. (2003) *An experience on students' participation in blended vs. online style of learning*. Inrogds- the SIGCSE Bulletin, 35 (4).

Dreder, A. (2005) *Statistical testing of hypotheses in psychological, educational and social research*. Cairo: The World of Books.

El-Deghaidy, H. & Nouby, A. (2008) Effectiveness of a blended e-learning cooperative approach in an Egyptian teacher education programme. *Computers & Education*, 51, 988-1006.

Ernst H. & Colthorpe K. (2007) The efficacy of interactive lecturing for students with diverse science backgrounds. *Advances in Physiology Education*, 31, 41-44.

Garnham, C. & Kaleta, R. (2002) Introduction to hybrid courses. *Teaching with Technology Today*, 8 (6). Available at: http://www.uwsa.edu/ttt/articles/garnham.htm (Accessed 3 December 2007).

Goldberg, H. R. & McKhann, G. M. (2000) Student test scores are improved in a virtual learning environment. *Advances in Physiology Education*, 23.1, 54 -66.

Gould. T. (2003) Hybrid classes: Maximizing institutional resources and student learning. *Proceedings of the 2003 ASCUE conference*, (8-12 June 2003), Myrtle Beach, South Carolina.

Gunnarsson, G. L. (2001) *Students' attitude and achievement in an online graduate statistics course*. Ed. D. Thesis, University of Cincinnati, United States, Ohio.

Gurpinar, E., Zayim, N. Ozenci, C. C. & Alimoglu, M. K. (2009) First report about on e-learning application supporting PBL: students' usages, satisfaction, and achievement. *The Turkish Online Journal of Educational Technology*, 8 (2).

Gutierrez, F. M. (2006) Faculty best practices using blended learning in e-learning and face-to-face instruction. *International Journal on E-learning*, 5, (3), 313-337.

Haladyna, T. M., Downing, S. M. & Rodriguez, M.C. (2002) A taxonomy of multiple-choice item-writing rules. *Applied Measurement in Education*, 15(3), 309-334.

Hattie, J. A. (2008). *Visible learning* London: Routledge.

Hameed, S., Badii, A. & Cullen, A. J. (2008) Effective e-learning integration with traditional learning in a blended learning environment. *European and Mediterranean conference on information system*, (25-26May 2008).

Ismail, F. (2003) Infrastructure for the use of ICT in education, and distance education. *A working paper submitted to the regional symposium on the recruitment of information and communication technologies in education, and distance education in Damascus*, (15-17July 2003).

Johnson, B. & Christensen, L. (2008) *Educational Research: quantitative, qualitative, and mixed approaches*. California: Sage Publications, Inc.

Johnson, S. D., Aragon, S. R., Shalk, N. & Palma-Rivas, N. (2000) Comparative analysis of learner satisfaction and learning outcomes in online and face to face learning environment. *Journal Of Interactive Learning Research*. 11 (1), 29-49.

Jonassen, D. H. (1999) Designing constructivist learning environments. In: M.C. Reigeluth, ed. *Instructivist-design theories and models: A new paradigm of instructivist theory*, vol. ll. Lawrence Erlbaum associates, New Jersey.

Kekkonen-Moneta, S. & Moneta, G. B. (2002) E-learning in Hong Kong: comparing learning outcomes in online multimedia and lecture versions of an introductory computing course. *British Journal of Educational Technology*. 33 (4), 423-433.

Kembera, D. McNaught C., Chonga, F. Lamb, P. & Cheng, K.(2010) Understanding the ways in which design features of educational websites impact upon student learning outcomes in blended learning environments *Computers & Education* 55.3, November , Pp 1183-1192 doi:10.1016/j.compedu.2010.05.015

Kennedy, R. L. & McCallister, C. J. (2000) *Basic statistics via the internet*. Paper Presented at the Annual Meeting of the Mid-South Educational Research Association Bowling Green, KY November 15-17, 2000.

Khan, B. (2005) *Managing e-learning strategies: design, delivery, implementation and evaluation*. Hershey, PA, USA: idea group Inc.

Klein, D. & Ware, M. (2003) E-learning: new opportunities in continuing professional development. *Learned publishing*, 16 (1), 34-46.

Lim, D. H. (2002) Perceived differences between classroom and distance education: seeking instructional strategies for learning application. *International Journal of Educational Technology*. 3 (1).

Lim, D. H., Morris, M. L. & Kupritz, V. (2006) Online vs. blended learning: differences in instructional outcomes and learner satisfaction. *Paper presented at the academy of human resource development international conference*, (22-26 February 2006).

Lim, D. H. & Yoon, S. W. (2008) Team learning and collaboration between online and blended learner groups. *Performance Improvement Quarterly*. 21 (3), 59-72.

Malalla, J. N. (2004) *Psycho-Socio dynamics of E-learning: investigating student's perception of efficacy in asynchronous computer generated learning*. University of Bradford, UK.

Marc, J. R. (2002) Book review: e-learning strategies for delivering knowledge in the digital age. *Internet and Higher Education*, 5, 185-188.

Masgoret, A.-M., & Gardner, R. C. (2003). Attitudes, motivation and second language learning: A meta- analysis of studies conducted by Gardner and associates. In Z. Dörnyei (Ed.), Attitudes, orientations, and motivations in language learning (pp. 167– 210). Oxford, England: Blackwell.

Mayadas, F. & Picciano, A. (2007) Blended learning and localness: the means and the end. *Journal of Asynchronous Learning Networks*, 11 (1).

McFarlin, B. K. (2008) Hybrid lecture online format increases student grads in an undergraduate exercise physiology course at a large urban university. *Advances in Physiology Education*. 32, 86 -91.

Meyen E., Aust, R., Gauch, J.M., Hinton, H.S., Isaacson, R.E., Smith, S.J. and Tee, M.J. (2002) E-learning: a programmatic research construct for the future. *Journal of Special Education Technology*, 17(3).

Moller, L. (1998) Designing communities of learners for asynchronous distance education

Educational Technology, Research and Development; 46(4) pp 115-122.

Moore, J.L., Dickson-Deane, C., Galyen, (2011) e-Learning, online learning, and distance learning environments: Are they the same? The Internet and Higher Education, 14. 2, Pp 129-135.

O'Leary, M. B. (2008) *A case study of student learning outcomes based on the implementation of a blended course format in introductory Spanish*. Ph.D.University of Alabama, Tuscaloosa, USA.

Osguthorpe, R. & Graham, C. (2003) Blended learning environments: Definitions and directions. *The Quarterly Review of Distance Education*, 4 (3), 227-233.

Pallant, J. (2001) *SPSS survival manual, a step by step guide to data analysis using SPSS for windows (version 10 and 11)*. London: Open University Press.

Pereira, J. Pleguezuelos, E., Merí, A., Molina-Ros, A., Molina-Tomás, C. & Masdeu, C. (2007) Effectiveness of using blended learning strategies for teaching and learning human anatomy. *Medical Education*. 41, 189-195.

Richardson, J.T.E. (2011) Eta squared and partial eta squared as measures of effect size in educational research *Educational Research Review* Online Early doi:10.1016/j.edurev.2010.12.001 (accessed 21/4/11).

Ruffini, M. (2000) Systematic planning in the design of an educational web site. *Educational Technology*, 40(2), 58-64.

Ryan, W. J. (2002) Online and in the classroom: the numbers and what they might mean. Paper presented at the *League for Innovation in the Community College Innovations Conference* (Boston, MA, March 19-20, 2002) ERIC ED467851.

Salamh, A. M. J. (2005) The effectiveness of using the internet on the achievement of Jerusalem Open University students in the use of computer in education course. *Journal of Educational and Sciences*. Bahrain, 3 (1).

Scida, E. E. & Saury, R. E. (2006) Hybrid courses and their impact on student and classroom performance: a case study at the University of Virginia. *Calico Journal*, 23 (3), 517-531.

Sharaz, M. S. (2009) *Statistical analysis of data using SPSS software*. Makkah: Umm Al-Qura University.

Sharpe, R., & Benfield, G. (2005). The student experience of e-learning in higher education: A review of the literature. *Brooks EJournal of Learning and Teaching*, 3(1), 1−10.

Sipe, T. & Curlette, W.L. (1997) A Meta-Synthesis Of Factors Related To Educational Achievement: A Methodological Approach To Summarizing And Synthesizing Meta-Analyses *International Journal of Educational Research* 25. 7, 583-698.

Sonwalkar, N. (2002) A new methodology for evaluation: the pedagogical rating of online courses. *Syllabus*, 15 (6), 18-21.

Taradi, S., Taradi, M., Radic, K. & Pokrajac, N. (2005) Blending problem-based learning with web technology positively impacts student learning outcomes in acid-base physiology. *Advances in Physiology Edu*cation, 29, 35- 39.

Tavangarian D., Leypold M., Nölting K., & Röser M. (2004). Is e-learning the Solution for Individual Learning? *Journal of E-Learning*, 2.2. 273-280.

Thorne, K. (2003) *Blended learning: how to integrate online and traditional learning*. London: Kogan Page.

Urdan, T. A. & Weggen, C. C. (2000) *Corporate e-learning: exploring a new frontier*. WR Hambrech CO.

Utts, J., Sommer, B., Acredolo, C., Maher, M.W. & Matthews, H.R. (2003) A study comparing traditional and hybrid internet-based instruction in introductory statistics classes. *Journal of Statistics Education*. 11(3). Available at: www.amstat.org/publications/jse/v11n3/utts.html (accessed 7/3/11).

Wan, Z., Wang, Y. & Haggerty, N. (2008). Why people benefit from e-learning differently: The effects of psychological processes on e-learning outcomes. *Information & Management*, 45, 513-521.

Yamani, H. (2006) *Electronic learning to face challenges of Saudi higher education in the light of the requests of technology age*. MA Thesis. Umm Al-Qura University, Saudi Arabia.

Zinbarg, R., Yovel, I., Revelle, W. & McDonald, R. (2006). Estimating generalizability to a universe of indicators that all have an attribute in common: A comparison of estimators for . *Applied Psychological Measurement*, 30, 121 – 144.

Al-Qahtani, A. & Higgins, S.E. (2013) Effects of traditional, blended and e-learning on students' achievement in higher education *Journal of Computer Assisted Learning* 29.3, 220-234. http://dx.doi.org/10.1111/j.1365-2729.2012.00490.x

Appendix 1

Final draft of the achievement test of the Ethics Unit of the (101) Islamic culture course

Part one: general information

Student name: ……. Serial number: ……..

Group number: ……. Test date: ……..

Achievement test aim:

The aim of this test is to measure your achievement with regard to the third part of the (101) Islamic culture course, the Ethics section.

Part two: test instructions

The test consists (23) multiple choice questions, please take into account the following notices before you begin to answer the questions:

1- Read the questions carefully before you begin to answer them.
2- There is four options for every question (A, B, C, D), one of them is correct and the rest are not.
3- Put a circle around the correct answer.
4- Select only one answer for each question.
5- Answer all the test questions.
6- The final mark for the test is (23), one mark for every question.
7- You have (37) minutes to read the instructions and to answer all test questions.

Part three: encircle the correct answer in the following:

1- A morals can be defined as:

A- An attribute, natural or acquired, that positively influences behavior.

B- An attribute, natural or acquired, that might positively or negatively influence behavior.

C- A natural attribute that positively influence behavior.

D- An acquired attribute that positively influence behavior.

2- The distinction between morals and instincts is that:

A- Both influence behavior positively or negatively.

B- Only morals have influence on behavior positive or negative.

C- Only instincts have influence on behavior negative or positive.

D- None of the above is correct.

3- The behavior indication of the moral is:

A-Absolute indication B- Speculative indication

C- Sometimes absolute and sometimes speculative. D- None of the above

4- Which of the following types of behavior is a result of good moral values?

A- Showing a brave face. B- Cowardice

C- Denying out of arrogance D- Acting with caution expecting the worst.

5- Which of the following behaviour is motivated by natural instinct?

A- Drinking water when thirsty

B- To keep away from evil deeds for the sake of self purity.

C- Greed.

D- Insatiable appetite for food.

6- Having no bitter feelings or bearing no grudges against others is:

A- A personal attribute that motivates an individual to do his full duty by helping others as far as his capabilities and knowledge would allow.

B- A personal attribute that motivates an individual to acknowledge the bounties of God that are fairly distributed among people (slaves) which is a sign of the absolute wisdom and justice of the providence.

C- A personal attribute that motivates an individual to acknowledge to others about their personal attributes even if that confession is at the expense of his personal ambitions for glory.

D- None of the above is correct.

7- Which of the following principles constitutes a guideline recommended by Islam in case of moral confusion?

A- Consider yourself in other people's position

B- Always keep away when in doubt

C- The fire surrounding by desires and the paradise surrounding by difficulties.

D- All the above are correct.

8-Islam regulates instincts and desires by:

A- Banning anything that harms individuals or the society at large

B- Encouraging people to refrain from unnecessary deeds.

C- To keep luxury life under control in order to avoid self-corruptive practices.

D- All the above is true.

9- Which of the following is not included in the conditions that make one responsible of his own behavior?

A- Intention B- knowing the relevant Islamic guidance C- not being forced D- awareness

10- Organisation and perfection of work is related to:

A- The relationship between a person and other people

B- The relationship between the person and himself

C- The relationship between the person and his creator.

D- None of the above is correct.

11- Which of the following morals is related to social behavior?

A- Faithfulness B- optimism C- Satisfaction D- Decisiveness

12-Which of the following features is an individual behaviour?

A- Giving an interest-free loan

B- Making a sacrifice

C- being lenient

D- being optimistic

13- In case of conflicting moral rules, a Muslim has a duty to:

A- Reconcile between them

B- Consider one and reject the other

C- A and B.

D-None of the above is true

14- Which of the below cases is morally more reputable?

A- Being grateful to God for his creation and other bounties.

B- Being patient when disaster strikes.

C- Public charity.

D- Gift.

15- Regulating and developing habits rather than blocking them is a basic educational principle in Islam for the regulation of moral behaviour which known as:

A- Treelike care B- aggravation

C- Guidance and transformation D- emulation and attenuation

16- The meaning of self's purification is:

A-development of kindness in our selves

B-not responding to self's instincts and desires

C-controlling one's instincts and desires to religious obligations

D- A and C.

17- Punishment of people by estrangement for a morally wrong behavior is one of the educational methods for the acquisition of morals. This method had been

used by the Prophet (peace be upon him) to deal with some of his companions, which is known as:

A- The power of the state

B- Training, work and psychological practice

C- Social pressure

D- None of the above is correct.

18- The educational methods for the acquisition of moral in Islam are based on:

A- Reform.

B- Supervision and refinement.

C- Cancellation of evil moral and bringing good place.

D- A and B.

19- A person who is morally good is always aware of the high rank of the individual who is ever praying and fasting for God's sake because:

A- Being morally good is a continuous devotion to God

B- Being morally good is a devotion to God which is socially effective.

C- All the above are right

D-Heart action is more important than the action of limb.

20- Truthfulness is defined as

A- The consistency of words with reality

B- The consistency between the words of the speaker and what he believes no matter what he is saying is compatible with reality or not.

C- All the above are correct.

D- None of the above is correct.

21- Honesty is defined as:

A- Undertaking one's duties with full awareness of that he will be responsible for that before God

B- An established moral value that makes a person uninterested in claiming something without having the right to do so.

C- Not compromising the rights of others.

D-All the above are right.

22- Encouraging the sense of fear and greed in human soul is one of self motivated factors for acquisition of morals which known as:

A- Encouragement and intimidation

B- Moral sense education

C- Intellectual reasoning

D-Faith in god and the Day of Judgment

23- The influence of a role model regarding the acquisition of morals is due to:

A- The fact that it gives a practical example that wins the admiration of others persuading them to follow suit

B- The satisfaction that attaining a morally high ground is possible

C- The high ranking status of a role model in human communities

D- All the above statements are true.

Marking guide for the achievement test

Question No.	Answer	Mark	Question No.	Answer	Mark
1	B	1	13	C	1
2	A	1	14	A	1
3	B	1	15	A	1
4	A	1	16	D	1
5	A	1	17	C	1
6	B	1	18	D	1

7	D	1	19	D	1
8	D	1	20	A	1
9	D	1	21	D	1
10	B	1	22	A	1
11	A	1	23	D	1
12	D	1	Total		23